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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/717,341	11/18/2003	Takanori Nishio	16869K-040510US	8188

20350 7590 07/16/2004

TOWNSEND AND TOWNSEND AND CREW, LLP
TWO EMBARCADERO CENTER
EIGHTH FLOOR
SAN FRANCISCO, CA 94111-3834

EXAMINER	
INOA, MIDYS	

ART UNIT	PAPER NUMBER
2188	

DATE MAILED: 07/16/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/717,341	NISHIO ET AL.	
	Examiner	Art Unit	
	Midys Inoa	2188	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *18 November 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *9-21* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *9-21* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *18 November 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Drawings

1. The drawings received on November 18, 2003 have been accepted by the examiner.

Claim Rejections - 35 USC § 102

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 9-21 are rejected under 35 U.S.C. 102(b) as being anticipated by Shoroff et al. (6,023,744)

Regarding Claim 9, Shoroff discloses a method of operating a storage system wherein when a storage system detects that a remaining amount of its own storage area has become less than a predetermined value, a remote storage area provided by a remote storage system in communication with said storage system is made available as said storage area (Column 10, lines 45-54). This system detects that a remaining amount of its own storage area has become less than a predetermined value by determining if certain processed data, whose size is of a predetermined value, will fit in the remaining space in the target file. If the space is not sufficient, additional disk space is requested from the file system in order to enlarge the target file (see Figure 12). Since this system has the ability to connect to one or more networked devices through the I/O circuitry 34 (see Figure 1), the file system has the ability to acquire the additional space from remote storage (Column 4, lines 39-45).

Regarding Claim 10, Shoroff discloses the method of operating a storage system according to claim 9, wherein specifications such as a size and a logic format of said remote storage area to be utilized are notified from said storage system to said remote storage system, and wherein said remote storage system provides said remote storage area having said

specifications as the storage area for said storage system (see Figure 12, step 208). Since additional space from the remote storage is to be used to increase the size of the target file, this additional space must posses the specification (such as additional size needed and same logic format) that the system needs. If the specifications of the additional memory space are not compatible, then the additional space requested from the file system would be useless. To ensure that this does not happen, the specifications of the space needed must be known by the system.

Regarding Claim 11, Shoroff discloses the method of operating a storage system according to claim 9, wherein a utilization state of said remote storage area for said storage system is monitored in said remote storage system, and wherein whether or not said storage area in said storage system is to be increased is decided according to said utilization state (Column 10, lines 45-54). Shoroff determines if the processed data fits in the remaining space of the target file. Such a determination requires the monitoring of the used capacity of the target file as well as monitoring of the space available in the remote storage ("utilization state"). Referring to Figure 12, step 206 reads the used capacity of the target file, calculates how much empty space is remaining in the target file and then determines if the processed data fits into the target file. In step 208 a calculation is made as to how much of the remote storage is needed to fit the processed data in the target file and such storage amount is used to increase the target file.

Regarding Claim 12, Shoroff discloses the method of operating a storage system according to claim 9, wherein data stored and managed in said storage area is copied to the storage area of said storage system when the storage area of said storage system is enlarged (Column 10, lines 45-54). This system does not store the processed data into the target file until such target file is enlarged to fit the contents of the processed data.

Regarding Claim 13-20, Shoroff et al. discloses the storage system used in the method of operating a storage system according to claims 9-12, comprising at least one unit providing said storage area (memory 24), and a communication interface (I/O 34) for communicating with said remote storage (disk drive 40). See Figure 1.

Regarding Claim 21, Shoroff et al. discloses a method of operating a storage system, wherein when a storage system detects that a remaining amount of its own storage area that is provided by at least one first disk unit installed in said storage system (memory 24) has become less than a predetermined value, a remote storage area (disk drive 40) that is provided by at least one second disk unit installed in a remote storage system in communication with said storage system (via I/O 34) is made available as said storage area. This system detects that a remaining amount of its own storage area has become less than a predetermined value by determining if certain processed data, whose size is of a predetermined value, will fit in the remaining space in the target file. If the space is not sufficient, additional disk space is requested from the file system in order to enlarge the target file (see Figure 12). Since this system has the ability to connect to one or more networked devices through the I/O circuitry 34 (see Figure 1), the file system has the ability to acquire the additional space from remote storage (Column 4, lines 39-45).

Said storage system having a correspondence between a port ID for specifying each disk unit (file information maintained in records in master file table 50, column 5, lines 1-20), and an identifier of said first disk unit or an identifier of said second disk unit (pointers 78 or 82, column 10, lines 57-67), and wherein, when said storage system uses said remote storage area as its storage area, said storage system has a correspondence between: said port ID (in master file

table) which identifies the data file extending the target file, and an identifier of said second disk unit that provides said remote storage area (pointers 78 and 82, tracking the point to which data has been read from and which increase when the target file is increased).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Midys Inoa whose telephone number is (703) 305-7850. The examiner can normally be reached on M-F 7:00am - 4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mano Padmanabhan can be reached on (703) 306-2903. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Midys Inoa
Examiner
Art Unit 2188

MI